## [Sequence Listing]

	<110>	Korea Research Institute of Bioscience and Biotechnology
5	<120>	Identification method of genus streptomyces by using groEL2 gen
	<160>	61
10	<170>	KopatentIn 1.71
	<210>	1
	<211>	22
	<212>	DNA
	<213>	Artificial Sequence
15		
	<220>	
	<223>	forward primer STGROF1
20	<400>	1
	ccatcgc	caa ggagatcgag ct 22
	<210>	2
25	<211>	22
	<212>	DNA
	<213>	Artificial Sequence
	<220>	

## <223> reverse primer STGROR2

	<400>	2	
5	tgaaggt	gcc rcggatcttg tt 22	
	<210>	3	
	<211>	420	
10	<212>	DNA	
	<213>	S. acrimycini	
	<400>	3	
	aagaaga	acgg acgacgtcgc cggtgacggt acgaccaccg cgaccgttct cgcccaggcc	60
15			
	ctggtcag	ggg agggcctgcg caacgtcgcc gccggcgcca acccgatggc tctgaagcgc	120
		•	
	ggcatcga	aga aggccgtcga ggccgtctcc gccgccctgc tggagcaggc gaaggacgtc	180
20	gagacca	agg agcagatege etceaeggee tecateteeg eegeegaeae eeagategge	240
	gagctcat	cg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
	tcccagac	ct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac	360
25			
	atctcggc	gt acttcgccac cgacatggag cgtatggagg ccgtcctcga cgacccgtac	420

<211> 420 <212> DNA <213> S. aculeolatus 5 <400> aagaagacgg acgacgtcgc cggtgacggc acgaccaccg cgaccgtcct cgcccaggcc 60 ctggtcaagg agggcctgcg gaacgtggcc gccggcgcca acccgatggc gctgaagcgc 120 10 ggcatcgaga aggccaccga ggccgtctcc gccgccctgc tggagcaggc caaggacgtg 180 gagaccaagg agcagatege etecacegee tecateteeg eeggegacae eeagategge 240 gagctgatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 15 300 tegeagacet tegggetgga gettgagete acegagggea tgegettega caagggetae 360 atctccgcct acttcgccac cgacatggag cgcatggagg cggagctcga ggacccgtac 420 20 420 <210> 5 25 <211> 420 <212> DNA <213> S. alanosinicus <400> 5 30 aagaagacgg acgacgtcgc cggtgacggt acgaccaccg cgaccgtgct cgcccaggcc

<210>

	ctggtcaagg aaggcctgcg caacgtcgcc gccggcgcca acccgatggc cctgaagcgc	120
5	ggtatcgaga aggccgtcga ggccgtctcc gccgccctgc tggagcaggc gaaggacgtc	180
3	gagaccaagg agcagatege etceacegeg tecateteeg eegeegacae eeagategge	240
	gageteateg eegaggeeat ggacaaggte ggeaaggaag gegteateae egtegaggag	300
10	agcaacacct tcggtctgga gcttgagctc accgagggca tgcgcttcga caagggctac	360
	atctccgcct acttcgcgac cgacatggag cgcatggagg cggtgctcga ggacccgtac	420
15		420
	<210> 6	
	<211> 420	
	<212> DNA	
20	<213> S. albireticuli	
	<400> 6	
	aagaagacgg acgacgtcgc cggtgacggc acgacgaccg cgaccgtcct cgcccaggcg	60
25	ctggtccgcg agggtctgcg caacgtggcc gccggtgcca acccgatggc cctgaagcgt	120
	ggcatcgaga aggccgtcga ggccgtctcc gccgccctgc tcgagcaggc caaggacgtg	180
30	gagaccaagg agcagatcgc ctccaccgcc tccatctccg ccgccgacac ccagatcggc	240

	gagettateg eegaggegat ggataaggte ggeaaggaag gegteateae egtegaggag	g 30
	tcccagacct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac	360
5	atctcggcgt acttcgccac cgacatggag cgtatggagg cgtcgctcga cgacccgtac	420
		420
10	<210> 7	
	<211> 42 3	
	<212> DNA	
	<213> S. albofaciens	
15	<400> 7	
	aagaagacgg acgacgtcgc cggtgacggc acgaccaccg cgaccgtcct ggcccaggcc	60
	ctggtcacag cggagggcct gcgcaacgtc gccgccggcg ccaacccgat ggccctcaag	120
20		
20	cgcggtatcg agcgccgt cgaggccgtc tccgccgccc tgctggagca ggcgaaggac	180
	ataragacca agga gas gab acceptance and a	
	gtggagacca aggagcagat cgcctccacc gcctccatct ccgccgccga cacccagatc	240
	ggcgagctga tcgccgaggc catggacaag gtcggcaagg aaggcgtcat caccgtcgag	200
25	oo o o o o o o o o o o o o o o o o o o	300
	gagtcccaga ccttcggtct ggaactggag ctcaccgagg gtatgcgctt cgacaagggc	360
	tacatctcgg cgtacttcgc caccgacatg gagcgtatgg aggcgtcgct cgacgacccg	420
30	tac	423

<210> 8 <211> 420 <212> DNA <213>  $S.\ albogrise olus$ <400> 8 aagaagacgg acgacgtcgc cggtgacggt acgaccacgg cgaccgttct cgcccaggcc 60 10 ctggtcaagg agggcctgcg caacgtcgcc gccggcgcca acccgatggc cctgaagcgc 120 ggtatcgaga aggccgtcga ggccgtctcc gccgccctcc tggagcaggc gaaggacgtg 180 15 gagaccaagg agcagatcgc ctccacggcc tccatctccg ccgccgacac ccagatcggc 240 gagctcatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 300 tcccagacct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac 360 20 atctcggcgt acttcgccac cgacatggag cgtatggagg ccgtcctcga cgacccgtac 420 420

25

<210> 9

<211> 420

<212> DNA

<213> S. alboniger

	<400>	9	
	aagaag	gacgg acgacgtcgc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcc	60
5	ctggtgo	egeg agggtetgeg caaegtggee geeggtgeea accegatgge eetcaagege	120
	ggcatc	gaga aggccgtcga ggccgtctcc ggtgccctcc tcgagcaggc gaaggatgtc	180
	gagacc	aagg agcagatcgc ttccacggcc tccatctccg ccgccgacac ccagatcggc	240
10	gagctga	atcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
	tcccaga	cct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac	360
15	atctcgg	cgt acttcgccac cgacatggag cgtatggagg cgtcgctcga cgacccgtac	420
			420
			420
	<210>	10	420
20	<210> <211>	10 420	420
20			420
20	<211>	420	420
20	<211> <212>	420 DNA	420
20	<211> <212> <213> <400>	420 DNA S. albus	420
	<211> <212> <213> <400> aagaaga	420 DNA S. albus	

	gagaccaagg agcagatege etceacegee tegateteeg eeggegacat eeagateggt	240
	gagctgatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
5	tcgcagacct tcggtctcga gctggagctc accgagggca tgcgcttcga caagggctac	360
	atctccgcct acttcgccac cgacatggag cgcatggagg cggagctcga ggacccgtac	420
		420
10		
	<210> 11	
	<211> 420	
	<212> DNA	
15	<213> S. ambofaciens	
	<400> 11  aagaagacgg acgacgtcgc cggtgacggt acgaccaccg cgaccgttct cgcccaggcc	60
20	ctggtcaagg aaggcctgcg caacgtcgcg gccggcgcca acccgatggc cctgaagcgc	120
	ggcatcgaga aggccgtcga ggccgtctcc gccgccctgc tggagcaggc gaaggacgtc	180
25	gagaccaagg agcagatcgc ctccacggcc tccatctccg ccgccgacac ccagatcggc	240
23	gagctcatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
	tcccagacct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac	360
30	atctcggcgt acttcgccac cgacatggag cgtatggagg cgtcgctcga cgacccgtac	420

5	<210>	12	
	<211>	420	
	<212>	DNA	
	<213>	S. aminophilus	
10	<400>	12	
	aagaaga	cgg acgacgtcgc ctgtgacggc acgacgaccg cgaccgtcct ggcccaggcc	60
	ctggtcaa	ngg agggcctgcg caacgtcgcc gccggcgcca acccgatggc cctgaagcgc	120
15	ggcatcg	age gegecacega ggeegtetee geegeeetge tggageagge gaaggaegtg	180
	gagacca	agg agcagatege etecacegee tecateteeg etgeegacae ecagategge	240
	gagctga	tcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
20			
	tcgcaga	cct tcggtctcga gctggagctc accgagggca tgcgcttcga caagggctac	360
	atctccg	ect acttegeeae egacatggag egeatggagg eggagetgga ggaceeetae	420
25			420

<210> 13

<211> 420

<212> DNA

30

## <213> S. anandii

	<400>	13	
5	aagaaga	cgg acgacgtcgc cggtgacggt acgaccaccg cgaccgtgct cgcccaggcc	60
	ctggtccg	cg agggcctgcg caacgtggcc gccggcgcca acccgatggc tctgaagcgc	120
	ggtatcga	aga aggeegtega ggeegtetee geegeeetge tegaceagge caaggaggte	180
10	gagacca	agg agcagatege etecacegee tecateteeg eegeegaeae eeagategge	240
	gagctcat	teg cegaggecat ggacaaggte ggeaaggaag gegteateae egtegaggag	300
15	tcgcagae	cct teggtetgga getegagete acegagggea tgegettega caagggetae	360
	atctccgc	ct acttegeeae egacatggag egcatggagg egtegetega ggaceegtae	420
			420
20			
	<210>	14	
	<211>	420	
	<212>	DNA	
	<213>	S. argenteolus	
25			
	<400>	14	
	aagaaga	ncgg acgacgtcgc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcc	60

ctggtccgcg agggcctgcg caacgtcgcc gccggcgcca acccgatggc cctcaagcgc

30

	ggtatcgaga aggccgtcga ggccgtctcc gccgccctgc tcgagcaggc caaggacgtg	180
	gagaccaagg agcagatcgc ttcgaccgcc tccatctccg ccgccgacac ccagatcggc	240
5	gagctgatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
	tcccagacct tcggtctgga gctggaactc accgagggta tgcgcttcga caagggctac	360
10	atctcggcgt acttcgcgac cgacatggag cgcatggaag ccgcgctcga cgacccgtac	420
10		420
	<210> 15	
15	<211> 420	
	<212> DNA	
	<213> S. bambergiensis	
	<400> 15	
20	aagaagacgg acgacgtcgc cggtgacggt acgaccaccg cgaccgttct cgcccaggcc	60
	ctggtcaagg agggcctgcg caacgtagcc gccggcgcca acccgatggc cctcaagcgc	120
25	ggtatcgaga aggccgtcga ggccgtctcc ggtgccctgc tggagcaggc gaaggacgtc	180
23	gagaccaagg agcagatcgc ctccacggcc tccatctccg ccgccgacac ccagatcggc	240
	gagctcatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
30	tcccagacct tcggtctgga gctcgagctc accgagggca tgcgcttcga caagggctac	360

	atctcggc	gt acttcgccac cgacatggag cgtatggagg cgtcgctcga cgacccgtac	420
			42 0
5			
	<210>	16	
	<211>	420	
	<212>	DNA	
10	<213>	S. capillispiralis	
	<400>	16	
	aagaaga	acgg acgacgtcgc cggtgacggt acgaccaccg cgaccgtcct cgcccaggcc	60
15	ctggtca	agg agggcctgcg caacgtcgcc gccggcgcca acccgatggc tctgaagcgc	120
	ggtatcg	aga aggccgtcga ggccgtctcc ggtgccctgc tggagcaggc gaaggatgtc	180
	gagacca	aagg agcagatcgc ctccacggcc tccatctccg ccgccgacac ccagatcggc	240
20			
	gagctca	tcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
	tcccaga	cct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac	360
25	atctcgg	cgt acttcgccac cgacatggag cgtatggagg ccgtcctcga cgacccgtac	420
			420

<211> 420

<213> S. carpinensis

DNA

5 <400> 17

<212>

aagaagacgg acgacgtcgc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcg 60

ctggtccgcg agggcctgcg caacgtggcc gcgggtgcca acccgatggc cctgaagcgc 120

.

10 ggcatcgaga aggccgtcga ggccgtctcg ggcgccctgc tcgaccaggc caaggaggtc 180

gagaccaagg agcagatege etceaeggee tecateteeg eegeegacae eeagategge 240

gagctgatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 300

15

tcccagacct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac 360

atctcggcgt acttcgcgac cgacatggag cgcatggagg cggcgctcga cgacccgtac 420

20 420

<210> 18

<211> 422

25 <212> DNA

<213> S. catenulae

<400> 18

aagaagacgg acgacgtcgc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcg 60

	ctggtccg	gcg agggcctccg taacgtcgcc gccggtgcca acccgatggc cctcaagcgg	120
	ggcatcg	aga cegeegtega ggeegtetee geegeeetge tggageagge caaggaegtg	180
5	gagacca	agg agcagatcgc ttcgaccgcc tccatctccg ccgccgacac ccagatcggc	240
	gagctga	tcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
10	tcccagae	cct teggtetgga getggagete acegagggta tgegettega caagggetae	360
10	atctcggo	egt acttegecae egacatggag egtatggagg egtegetega egaceegtae	420
	at		422
15			
	<210>	19	
	<211>	420	
	<212>	DNA	
	<213>	S. cellulosae	
20			
	<400>	19	
	aagaaga	acgg acgacgtcgc cggtgacggt acgaccacgg cgaccgttct cgcccaggcc	60
25	ctggtca	agg agggcctgcg caacgtcgcc gccggcgcca acccgatggc cctgaagcgc	120
23	ggtatcg	aga aggccgtcga ggcggtctcc gccgccctgc tggagcaggc gaaggacgtg	180
	gagacca	aagg agcagatege etecaeggee tecateteeg eegeegaegt eeagategge	240
30	gagctca	tcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300

	tcccagac	cct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac	360
5	atctcggc	egt acttegeeae egacatggag egtatggagg eegteetega egaceegtae	420
			420
	<210>	20	
10	<211>	420	
	<212>	DNA	
	<213>	S. chartreusis	
	<400>	20	
15	aagaaga	acgg acgacgtcgc cggtgacggt acgaccaccg cgaccgttct cgcccaggcc	60
	ctggtcaa	agg agggcetgeg caaegtagee geeggegeea accegatgge eetcaagege	120
	ggtatcg	age gtgeegtega ggeegtetee geegeeetge tegageagge caaggatgte	180
20			
	gagacca	agg agcagatege ttecaeggee tecateteeg eegeegacae eeagategge	240
	gagctca	tcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
25	tcccaga	cct teggtetgga getggagete acegagggta tgegettega caagggetae	360
	atctcggo	egt acttegecae egacatggag eggatggagg egtegetega egaceegtae	420
		•	
			420

<211> 420

<212> DNA

5 <213> S. chattanoogensis

<400> 21

aagaagacgg actacgtcgc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcc 60

10 ctggtccgcg agggcctgcg caacgttgcc gccggtgcca acccgatggc gctgaagcgc 120

ggtatcgaga aggccgtcga gtccgtctcc gccgccctgc tcgagcaggc gaaggatgtc 180

gagaccaagg agcagatcgc ttccaccgcc tccatctccg ccgccgacac ccagatcggt 240

gagctcatcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 300

tcccagacct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac 360

20 atctcggcgt acttcgcgac cgacatggag cgcatggagg cggtcctgga tgacccgtac 420

420

25 <210> 22

<211> 420

<212> DNA

<213> S. cinnamonensis

30 <400> 22

	aagaagacgg acgacgtcgc cggcgacggt acgaccaccg ccaccgtcct ggcccaggcg	g 60
	ctcgtccgcg agggcctgcg caacgtggcc gccggtgcca acccgatggc cctcaagcgt	120
5	ggtatcgaga aggccgtcga ggccgtctcc gccgccctgc tcgcccaggc caaggatgtc	180
	gagaccaagg agcagatcgc ttccacggcc tccatctccg ccgccgacac ccagatcggc	240
10	gageteateg eegaggeeat ggacaaggte ggeaaggaag gegteateae egtegaggag	g 300
10	tcccagacct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac	360
	atctcggcgt acttcgccac cgacatggag cgcatggagt cgtccctcga cgacccgtac	420
15		420
	<210> 23	
	<211> 420	
20	<212> DNA	
	<213> S. cinereoruber	
	<400> 23	
25	aagaagacgg acgacgtcgc cggtgacgga acgaccaccg cgaccgttct cgcccaggc	g 60
	ctggtccgcg agggccttcg caacgtcgcc gccggcgcca acccgatggc tctgaagcgc	120

ggtatcgaga aggccgtcga ggccgtctcc ggtgccctgc tcgagcaggc gaaggatgtc

gagaccaagg agcagatcgc ttcgacggcc tccatctccg ccgccgacac ccagatcggc

	gagctcatcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
5	tcccagacct tcggtctgga gctggaactc accgagggca tgcgcttcga caagggctac	360
3	atctcggcgt acttcgccac cgacatggag cgtatggagg ccgtcctcga cgacccgtac	420
		420
10		
	<210> 24	
	<211> 420	
	<212> DNA	
	<213> S. cirratus	
15		
	<400> 24	
	aagaagacgg acgacgtcgc gggcgacggt acgaccaccg ccaccgtgct ggcccaggcg	60
20	ctcgtccgcg agggcctgcg caacgtggcc gccggcgcca acccgatggc cctcaagcgt	120
20	ggtatcgaga aggccgtcga ggccgtctcc gccgccctgc tcgcgcaggc caaggatgtc	180
	gagaccaagg agcagatcgc ttcgacggcc tccatctccg ccgccgacac ccagatcggc	240
25	gageteateg eegaggeeat ggacaaggte ggeaaggaag gegteateae egtegaggag	300
	tcccagacct tcggtctgga gctcgagctc accgagggca tgcgcttcga caagggctac	360
	atctcggcgt acttcgccac cgacatggag cgtatggagg cgtcgctcga cgacccgtac	420

	<210>	25	
5	<211>	420	
	<212>	DNA	
	<213>	S. coeruleorubidus	
	<400>	25	
10	aagaaga	acgg acgacgtcgc cggtgacggt acgaccaccg cgaccgttct cgcccaggcc	60
	ctggtcaa	agg aaggeetgeg caaegtagee geeggegeea accegatgge geteaagege	120
	ggtatcg	agc gcgccgtcga ggccgtctcc gccgccctgc tggagcaggc gaaggacgtc	180
15			
	gagacca	nagg agcagatege etceaeggee tecateteeg eegeegacae eeagategge	240
	gagctca	tcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
20	tcccaga	cct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac	360
	atctcgg	cgt acttcgcgac cgacatggag cgtatggagg ccgtcctcga cgacccgtac	420
			420
25			
	<210>	26	
	<211>	420	
	<212>	DNA	

<213> S. collinus

	<400> 26	
	aagaagacgg acgacgtcgc cggtgacggt acgaccaccg cgaccgttct cgcccaggcc	60
5	ctggtcaagg agggtctgcg caacgtagcc gccggcgcca acccgatggc cctcaagcgc	120
	ggtatcgagc gtgccgtcga ggccgtctcc gccgccctgc tggagcaggc gaaggacgtc	180
	gagaccaagg agcagatege etecaeggee tecateteeg eegeegacae eeagategge	240
10	gageteateg eegaggeeat ggacaaggte ggeaaggaag gegteateae egtegaggag	300
	tcccagacct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac	360
15	atctcggcgt acttcgccac cgacatggag cgtatggagg ccgtcctcga cgacccgtac	420
		420
		420
20	<210> 27	420
20	<210> 27 <211> 420	420
20		420
20	<211> 420	420
20	<211> 420 <212> DNA	
	<211> 420 <212> DNA <213> S. corchorusii	420
	<211> 420 <212> DNA <213> S. corchorusii <400> 27	

ggtatcgaga aggccgtcga ggccgtctcc gccgccctgc tggagcaggc gaaggacgtc

	gagaccaagg agcagatege etecacegeg tecateteeg eegeegacae eeagategge	240
5	gagctgatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
3	tccaacacct tcggtcttga gctggagctc accgagggca tgcgcttcga caagggctac	360
	atctccgcct acttcgcgac cgacatggag cgcatggagg cggtgctgga ggacccgtac	420
10		420
	<210> 28	
	<211> 420	
15	<212> DNA	
	<213> S. diastaticus	
	<400> 28	
20	aagaagacgg acgacgtcgc cggtgacggt acgaccaccg cgaccgtcct cgcccaggcg	60
20	ctcgtccgtg agggcctgcg caacgtggcc gccggcgcca acccgatggc cctgaagcgc	120
	ggcatcgaga aggccgtcga ggccgtctcc ggcgccctgc tcgagcaggc caaggacgtg	180
25	gagaccaagg agcagatcgc ctccaccgcc tccatctccg ccgcggacgt ccagatcggt	240
	gageteateg eegaggeeat ggacaaggte ggeaaggaag gegteateae egtegaggag	300
	tcccagacct tcggtctgga gctcgagctc accgaaggca tgcgcttcga caagggctac	360

			420
5			
	<210>	29	
	<211>	420	
	<212>	DNA	
	<213>	S. djakartensis	
10	<400>	29	
		acgg acgacgtcgc cggtgacggt acgaccaccg cgaccgtcct cgcccaggcc	60
15	ctggtcaa	ngg aaggeetgeg caaegtegee geeggegeea accegatgge eetgaagege	120
	ggtatcga	agc gcgccgtcga ggccgtctcc gccgccctgc tggagcaggc gaaggacgtc	180
	gagacca	agg agcagatege etceaeggee tecateteeg eegeegacae eeagategge	240
20	gagctca	tcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
	tcccagac	cct teggtetgga getggagete acegagggta tgegettega caagggetae	360
25	atctcggc	egt acttegeeae egacatggag egtatggagg eegteetega egaceegtae	420
			420

423

<211>

30

atctcggcgt acttcgccac cgacatggag cgtatggagg cgtccctgga cgacccgtac

<213> S. erumpens <400> 30 60 aagaagacgg acgacgtcgc cggtgacggc acgaccaccg cgaccgttct ggcccaggcc 120 ctggtcacag cggagggcct gcgcaacgtc gccgccggcg ccaacccgat ggccctgaag 180 cgcggtatcg agaaggccgt cgaggccgtc tccgccgccc tgctcgagca ggccaaggac 10 gtggagacca aggagcagat cgcttccacc gcctccatct ccgccgccga cacccagatc 240 300 ggcgagctga tcgccgaggc catggacaag gtcggcaagg aaggcgtcat caccgtcgag 360 15 gagtcccaga ccttcggtct ggagctggaa ctcaccgagg gtatgcgctt cgacaagggc 420 tacatctcgg cgtactttgc caccgacatg gagcgcatgg aggccgcgct cgacgacccg 423 tac 20 <210> 31 <211> 420 <212> DNA 25 <213> S. fulvissimus <400> 31 60 aagaagacgg acgacgtcgc cggtgacggc acgacgaccg cgaccgtcct cgcccaggcg

ctcgtcaagg aaggcctgcg caacgtcgcg gccggcgcca acccgatggc cctcaagcgc

<212>

30

DNA

	ggcatcg	aga aggccgtcga ggccgtctcc ggcgccctgc tcgagcaggc caaggacgtg	180
_	gagacca	agg agcagatege ttegacegee tecateteeg eegeegaeae eeagategge	240
5	gagctca	tcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	30 0
	tcgcaga	cct teggtetgga getegagete acegagggea tgegettega caagggetae	360
10	atctcggo	egt acttegecae egacatggag egtatggagg egtegetega egaceegtae	420
			420
15	<210>	32	
	<211>	420	
	<212>	DNA	
	<213>	S. galilaeus	
20	<400>	32	
	aagaaga	acgg acgacgtcgc cggtgacggt acgaccaccg cgaccgttct cgcccaggcg	60
	ctggtcc	geg agggeetgeg caaegtggeg geeggegeea accegatgge tetgaagege	120
25	ggcatcg	aga aggccgtcga ggccgtctcc ggtgccctcc tcgagcaggc gaaggatgtc	180
	gagacca	nagg agcagatege ttegaeggee tecateteeg eegeegaeae eeagategge	240
	gagctca	tcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac ggtcgaggag	300

tcgcagacct tcggtctcga gctcgagctc accgagggca tgcgcttcga caagggctac 360

atctcggcgt acttcgcgac cgacatggag cgtatggagg ccgtcctcga cgacccgtac 420

420

15

20

25

<210> 33 <211> 420

10 <212> DNA <213> S. griseochromogenes

<400> 33

aagaagacgg acgacgtcgc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcc 60

ctggtcaagg aaggcctccg caacgtcgcc gccggcgcca acccgatggc tctgaagcgc 120
ggtatcgaga aggccgtcga ggccgtctcc gccgccctcc tcgagcaggc gaaggacgtc 180

gagctgatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 300

gagaccaagg agcagatcgc ctccaccgcg tccatctccg ccgccgacac ccagatcggc

agcaacacct teggtetgga getegagete acegagggea tgegettega caagggetae 360

atctccgcct acttcgcgac cgacatggag cgcatggagg cggcgctcga ggacccgtac 420

420

30

<211> 420 <212> DNA <213> S. griseolus <400> 34 60 aagaagacgg acgacgtcgc cggcgacggt acgaccaccg ccaccgttct cgcccaggcg 120 ctcgtccgtg agggcctgcg caacgtcgcc gccggtgcca acccgatggc tctcaagcgt 10 180 ggcatcgaga aggccgtcga ggccgtctcc gccgccctgc tggagcaggc caaggacgtg gagaccaagg agcagatcgc ttcgaccgcc tccatctccg ccgccgacac cgagatcggc 240 300 15 gccaagatcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 360 tcccagacct tcggtctgga gctggaactc accgagggta tgcgcttcga caagggctac 420 atctcggcgt acttcgccac cgacatggag cgtatggaga cgtcgttcga cgacccgtac 20 420 <210> 35 25 <211> 420 <212> DNA <213> S. griseoviridis <400> 35

aagaagacgg acgacgtcgc cggtgacggt acgaccaccg cgaccgtcct cgcccaggcc

<210>

30

34

	ctggtcaagg agggcctgcg caacgtagcc gccggcgcca acccgatggc cctgaagcgc	120
	ggtatcgaga aggccgtcga ggccgtctcc gccgccctgc tggagcaggc gaaggacgtc	180
,	gagaccaagg agcagatege etceaeggee tecateteeg eegeegacae eeagategge	240
	gagctgatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
)	tcccagacct ttggtctgga gctggagctc accgagggta tgcgcttcga caagggctac	360
	atctcggcgt acttcgccac cgacatggag cgtatggagg ccgtgctcga cgacccgtac	420
_		420
•		

10

5

<210> 36

<211> 420

<212> DNA

20 <213> S. humiferus

<400> 36

aagaagacgg acgacgtcgc cggtgacggt acgaccaccg cgaccgttct cgcccaggcc 60

ctggtcaagg aaggcctgcg caacgtcgcg gccggcgcca acccgatggc cctgaagcgc 120

ggtatcgaga aggccgtcga ggccgtctcc gccgccctgc tcgagcaggc caaggacgtc 180

gagaccaagg agcagatege etceaeggee tegateteeg eegeegacae eeagategge 240

30

	gagctcat	teg eegaggeeat ggacaaggte ggeaaggaag gegteateae egtegaggag	300
	tcccagac	cct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac	360
5	atctcggc	gt acttegecae egacatggag egtatggagg egtegetega egaceegtae	420
			420
10	<210>	37	
	<211>	420	
	<212>	DNA	
	<213>	S. hygroscopicus	
15	<400>	37	
	aagaaga	ncgg acgacgtcgc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcc	60
	ctggtccg	geg agggeetgeg caaegtegee geeggegeea accegatgge eetcaagege	120
20	ggtatcga	agc gtgccgtcga ggccgtctcc gccgccctgc tggagcaggc caaggacgtg	180
	gagacca	agg agcagatcgc ttcgaccgcc tccatctccg ccgctgacac ccagatcggc	240
	gagctca	tcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
25	tcccagao	ect teggtetgga getggaacte acegagggta tgegettega caagggetae	360
	atctcggo	gt acttcgccac cgacatggag cgtatggagg cgtcgctcga cgacccgtac	420
30			420

<211> 420

5 <212> DNA

<213> S. minutiscleroticus

<400> 38

10

20

25

aagaagacgg acgacgtcgc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcg 60

ctggtccgcg agggcctgcg caacgtcgcc gccggcgcca acccgatggc cctgaagcgc 120

ggtatcgaga aggccgtcga ggccgtctcc ggtgccctgc tggagcaggc gaaggacgtc 180

15 gagaccaagg agcagatcgc ctccacggcc tccatctccg ccgccgacgt ccagatcggc 240

gageteateg eegaggeeat ggacaaggte ggeaaggaag gegteateae egtegaggag 300

tcccagacct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac 360

atctcggcgt acttcgccac cgacatggag cgtatggagg ccgtcctcga cgacccgtac 420

<210> 39

<211> 423

<212> DNA

<213> S. murinus

30

39 <400> 60 aagaagacgg acgacgtcgc cggtgacggt acgaccaccg cgaccgtcct cgcccaggcc 120 ctggtcacag cggaaggcct gcgcaacgtc gccgccggtg ccaacccgat ggccctgaag 5 180 cgcggtatcg agaaggccgt cgaggccgtc tccgccgccc tgctcgagca ggccaaggac gtcgagacca aggagcagat cgcctccacc gcgtccatct ccgccgccga cacccagatc 240 300 10 ggcgagctga tcgccgaggc gatggacaag gtcggcaagg aaggcgtcat caccgtcgag 360 gagagcaaca ccttcggtct ggagcttgag ctcaccgagg gcatgcgctt cgacaagggc 420 tacatetteg cetaettege cacegacatg gagegeatgg aggegteget egacgaceeg 15 423 tac <210> 40 20 <211> 420 <212> DNA <213> S. nodosus <400> 40 aagaagacgg acgacgtcgc cggtgacggt acgaccaccg cgaccgtgct cgcccaggcg 60 25

30

ctggtccgcg agggcctgcg caacgtcgcc gccggtgcca acccgatggc cctgaagcgc

ggtatcgaga aggccgtcga ggccgtctcc accgccctgc tggagcaggc gaaggacgtc

120

	gagaccaagg agcagatege etceaeggee tecateteeg eegeegacae eeagategge	240
	gagctgatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
5	tcgcagacct tcggtctcga gctcgagctc accgagggca tgcgcttcga caagggctac	360
	atctcggcgt acttcgccac cgacatggag cgtatggagg ccgtcctcga cgacccgtac	420
10		420
10		
	<210> 41	
	<211> 420	
	<212> DNA	
15	<213> R. equi	
	<400> 41	
	aagaagaccg acgacgtcgc tggtgacggc accacgacgg ctacggtcct ggctcaggcg	60
20	ctcgtccgcg agggcctgcg caacgtcgct gccggcgcca acccgctggg tctgaagcgc	120
	ggcatcgaga aggccgtcga ggccgtcacc gccaagctgc tcgacaccgc caaggaggtc	180
25	gagaccaagg agcagatege tgccacegee gggatetegg egggegacte caegategge	240
23	gageteateg eegaggegat ggacaaggte ggeaaggaag gegteateae egtegaggag	300
	tcgaactcct tcggcctgca gctcgagctc accgagggta tgcgcttcga caagggctac	360
30	atctcgctgt acttcgcgac cgacgccgag cgtcaggaag cggtcctcga ggatccgtac	420

5	<210>	42	
	<211>	420	
	<212>	DNA	
	<213>	T. paurometabola	
10	<400>	42	
	aagaaga	accg acgacgtcgc gggcgacggc accaccaccg ccaccgttct ggcccaggcg	60
	ctcgtgcg	gcg agggtctgcg caacatggct gcgggtgcga acccgctggg cctcaagcgg	120
15	ggcatcg	aga aggccgtcga ggccgtgacc gagcacctgc tcaaggaggc caaggaggtc	180
	gagacca	agg agcagatege tgetacegeg ggeatetegg eeggegacee egecateggt	240
	gagctca	tcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
20			
	agcaaca	cct teggteteca getggagete acegagggea tgegettega caagggette	360
			400
	atctccgg	get acttegeeae egaegeegag egteaggagg eegtgetega ggaegeetae	420
25			420
25			420

<211> 420

<212> DNA

## <213> S. scabiei ATCC 49173T

	<400>	43	
5	aagaaga	negg acgaegtege eggtgaeggt aegaeeaceg egaeegttet egeeeaggeg	60
	ctcgtacg	geg agggeetgeg caaegtegee geeggtgeea accegatgge teteaagege	120
	ggcatcg	aga aggcegtega ggcegtetee ggegeeetge tggageagge gaaggatgte	180
10	gagacca	agg agcagatege ttccaeggee tecateteeg eegeegaeae eeagategge	240
	gagetea	tcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
1.5	tcccaga	cct teggtetgga getggagete acegagggta tgegettega caagggetae	360
15	atctcggo	egt acttegeeae egacatggag eggatggagg egtegetega egaceegtae	420
			420
20			
	<210>	44	
	<211>	420	
	<212>	DNA	
	<213>	S. scabiei DSMZ 40961	
25			
	<400>	44	
	aagaaga	acgg acgacgtagc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcg	60
	ctggtccg	gcg agggcctgcg caacgtcgcc gccggcgcca acccgatggc cctgaagcgc	120

	ggtatcgaga aggccgtcga ggccgtctcc ggtgcgctgc tcgaccaggc caaggaggtc	180
	gagaccaagg agcagatcgc ctccacggcc tccatctccg ccgccgacac ccagatcggc	240
. 5	gageteateg eegaggegat ggacaaggte ggeaaggaag gegteateae egtegaggag	300
	tcgcagacct tcgggcttga gcttgagctc accgagggca tgcgcttcga caagggctac	360
10	atctcggcgt acttcgcgac cgacatggag cgcatggagg ccgtgctcga ggacccctac	420
10		420
	<210> 45	
15	<211> 420	
	<212> DNA	
	<213> S. scabiei DSMZ 40962	
	<400> 45	
20	aagaagacgg acgacgtcgc cggtgacggt acgaccaccg cgaccgttct cgcccaggcg	60
	ctcgtacgcg agggcctgcg caacgtcgcc gccggtgcca acccgatggc tctcaagcgc	120
25	ggcatcgaga aggccgtcga ggccgtctcc ggcgccctgc tggagcaggc gaaggatgtc	180
25	gagaccaagg agcagatege ttecaeggee tecateteeg eegeegacae eeagategge	240
	gagctcatcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
30	tcccagacct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac	360

		420
<210>	46	
<211>	420	
<212>	DNA	
<213>	S. scabiei IFO 3111	
<400>	46	
aagaaga	acgg acgacgtcgc cggcgacggt acgaccaccg ccaccgttct cgcccaggcg	60
ctcgtccg	rtg agggcctgcg caacgtcgcc gccggtgcca acccgatggc tctcaagcgt	120
ggcatcg	aga aggcegtega ggeegtetee geegeeetge tggageagge caaggaegtg	180
gagacca	agg agcagatege ttegacegee tecateteeg eegeegacae egagategge	240
gccaaga	atcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
tcccaga	cct teggtetgga getggaacte acegagggta tgegettega caagggetae	360
atctcgg	egt acttegecae egacatggag egtatggaga egtegttega egaceegtae	420
		420
	<211> <212> <213> <400> aagaaga ctcgtccg ggcatcg gagacca gccaaga tcccagaa	<211> 420 <212> DNA <213> S. scabiei IFO 3111

<210> 47

atctcggcgt acttcgccac cgacatggag cggatggagg cgtcgctcga cgacccgtac

420

<211> 420

<212> DNA

<213> S. scabiei IFO 13767

5 <400> 47

10

15

aagaagacgg acgacgtagc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcc 60

ctggtgcgcg agggtctgcg caacgtggcc gccggtgcca acccgatggc tctcaagcgc 120

ggcatcgaga aggccgtcga ggccgtctcc ggcgccctgc tggagcaggc gaaggatgtc 180

gagaccaagg agcagatege ttccaeggee tecateteeg eegeegacae eeagategge 240

gagctcatcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 300

tcccagacct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac 360

atctcggcgt acttcgccac cgacatggag cgtatggagg ccgtcctcga cgacccgtac 420

20 420

<210> 48

<211> 420

25 <212> DNA

<213> S. scabiei IFO 13768

<400> 48

aagaagacgg acgacgtagc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcc 60

	ctggtgcg	geg agggtetgeg caaegtggee geeggtgeea accegatgge tetcaagege	120
	ggcatcg	aga aggccgtcga ggccgtctcc ggcgccctgc tggagcaggc gaaggatgtc	180
5	gagacca	agg agcagatege ttccaeggee tecateteeg eegeegacae eeagategge	240
	gagctca	tcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
10	tcccagac	cct teggtetgga getggagete acegagggta tgegettega caagggetae	360
	atctcggc	egt acttegeeae egacatggag egtatggagg eegteetega egaceegtae	420
			420
15			
	<210>	49	
	<211>	420	
	<212>	DNA	
	<213>	S. scabiei IFO 12914	
20			
	<400>	49	
	aagaaga	acgg acgacgtcgc cggcgacggt acgaccaccg ccaccgttct cgcccaggcg	60
25	ctcgtccg	cg agggcctgcg caacgtcgcc gcgggtgcca acccgatggc tctgaagcgt	120
	ggcatcg	aga aggccgtcga ggccgtctcc gccgctctgc tggagcaggc gaaggacgtg	180
	gagacca	agg agcagatcgc ttcgacggcc tccatctccg ctgccgacac cgagatcggc	240
30	gccaaga	tcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300

	tcccagac	ect teggtetgga getggagete acegagggta tgegettega caagggetae	360
5	atctcggc	gt acttcgccac cgacatggag cgtatggaga cgtcgttcga cgacccgtac	420
			420
	<210>	50	
10	<211>	420	
	<212>	DNA	
	<213>	S. acidiscabies ATCC 49003T	
	<400>	50	
15	aagaaga	ncgg acgacgtagc cggtgacggc acgacgaccg cgacggtcct ggcccaggca	60
	ctggtccg	cg agggeeteeg caaegtegee geaggegeea accegatgge eetgaagege	120
20	ggcatcga	aga aggccgtcga ggccgtctcc ggcgcgctcc tggagcaggc gaaggacgtc	180
20	gagacca	agg agcagatege etceaeggee tecateteeg eegeegaeae geagategge	240
	gagctcat	tcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac ggtcgaggag	300
25	tcgcaga	cct teggeetgga gettgagete acegagggea tgegettega caagggetae	360
	atctcggc	egt acttegegae egacatggag egeatggagt egteeetgga egaceegtae	420
			420

<211> 420

<212> DNA

5 <213> S. turgidiscabies ATCC 700248T

<400> 51

aagaagacgg acgacgtagc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcg 60

10 ctggtccgcg agggcctgcg caacgtggcc gcgggtgcga acccgatggc cctgaagcgc 120

ggcatcgaga aggccgtcga ggccgtctcc ggtgcgctgc tcgaccaggc gaaggaggtc 180

gagacgaagg agcagatcgc ttcgaccgcc tccatctccg ccgccgacac gcagatcggc 240

gageteateg eegaggegat ggacaaggte ggeaaggaag gegteateae egtegaggag 300

tcccagacct tcggtctgga gctggaactc accgagggta tgcgcttcga caagggctac 360

20 atctcggcgt acttcgcgac cgacatggag cgcatggagg cgtcgctcga ggacccctac 420

420

25 <210> 52

15

<211> 42 0

<212> DNA

<213> S. turgidiscabies IFO 16079

30 <400> 52

	aagaagacgg acgacgtagc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcg	60
	ctggtccgcg agggcctgcg caacgtggcc gcgggtgcga acccgatggc cctgaagcgc	120
5	ggcatcgaga aggccgtcga ggccgtctcc ggtgcgctgc tcgaccaggc gaaggaggtc	180
	gagacgaagg agcagatcgc ttcgaccgcc tccatctccg ccgccgacac gcagatcggc	240
10	gagctcatcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
	tcccagacct tcggtctgga gctggaactc accgagggta tgcgcttcga caagggctac	360
	atctcggcgt acttcgcgac cgacatggag cgcatggagg cgtcgctcga ggacccctac	420
15		420
	<210> 53	
	<211> 420	
20	<212> DNA	
	<213> S. turgidiscabies IFO 16080	
	<400> 53	
25	aagaagacgg acgacgtagc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcg	60
23	ctggtccgcg agggcctgcg caacgtggcc gcgggtgcga acccgatggc cctgaagcgc	120
	ggcatcgaga aggccgtcga ggccgtctcc ggtgcgctgc tcgaccaggc gaaggaggtc	180
30	gagacgaagg agcagatcgc ttcgaccgcc tccatctccg ccgccgacac gcagatcggc	240

	gagctcatcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
5	tcccagacct tcggtctgga gctggaactc accgagggta tgcgcttcga caagggctac	360
5	atctcggcgt acttcgcgac cgacatggag cgcatggagg cgtcgctcga ggacccctac	420
		420
10		
	<210> 54	
	<211> 420	
	<212> DNA	
	<213> S. turgidiscabies IFO 16081	
15	<400> 54	
	aagaagacgg acgacgtagc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcg	60
20	ctggtccgcg agggcctgcg caacgtggcc gcgggtgcga acccgatggc cctgaagcgc	120
20	ggcatcgaga aggccgtcga ggccgtctcc ggtgcgctgc tcgaccaggc gaaggaggtc	180
	gagacgaagg agcagatcgc ttcgaccgcc tccatctccg ccgccgacac gcagatcggc	240
25	gagctcatcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
	tcccagacct tcggtctgga gctggaactc accgagggta tgcgcttcga caagggctac	360
	atctcggcgt acttcgcgac cgacatggag cgcatggagg cgtcgctcga ggacccctac	420

	<210>	55	
5	<211>	420	
	<212>	DNA	
	<213>	S. bottropensis IFO13023	
10	<400>	55 acgg acgacgtagc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcc	60
	ctggtgc	gcg agggtctgcg caacgtggcc gccggcgcca acccgatggc cctcaagcgc	120
15	ggcatcg	aga aggccgtcga ggccgtctcc ggcgccctgc tggagcaggc gaaggatgtc	180
	gagacca	nagg agcagatege ttccaeggee tecateteeg eegeegaeae eeagategge	240
	gagctca	tcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
20	tcccaga	cct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac	360
	atctcgg	cgt acttcgccac cgacatggag cgtatggagg ccgtcctcga cgacccgtac	420
25			420
	<b>-210</b> >	54	
	<210> <211>	56 420	
	<211>	DNA	
	1 <i></i> -		

<213> S. disastatochromogenes IFO13389

	<400> 56	
	aagaagacgg acgacgtcgc cggtgacggt acgaccaccg cgaccgttct cgcccaggcc	60
5	ctggtcaagg aaggcctgcg caacgtagcc gccggcgcca acccgatggc cctcaagcgc	120
	ggcatcgaga aggccgtcga ggccgtctcc ggtgcgctgc tcgaccaggc caaggaggtc	180
10	gagaccaagg agcagatcgc ctccacggcc tccatctccg ccgccgacac ccagatcggc	240
10	gagctgatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
	tegeagacet teggtetgga gettgagete acegagggea tgegettega caagggetae	360
15	atctcggcgt acttcgcgac cgacatggag cgcatggagg cggtcctgga ggacccctac	420
		420
		420
20	<210> 57	420
20	<210> 57 <211> 420	420
20		420
20	<211> 420	420
20	<211> 420 <212> DNA	420
	<211> 420 <212> DNA <213> S. neyagawaensis IFO 3784	420 60
	<211> 420 <212> DNA <213> S. neyagawaensis IFO 3784 <400> 57	

	gagacca	agg agcagatege etecaeggee tecateteeg eegeegaeae eeagategge	240
E	gagctga	tcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
5	tcgcagae	cct teggtetgga getegagete acegagggea tgegettega caagggetae	360
	atctcggc	egt acttegeeae egacatggag egcatggagg eggtgetega ggaceeetae	420
10			420
	<210>	58	
	<211>	420	
15	<212>	DNA	
	<213>	S. scabiei Korea isolate Jeju-H16	
	<400>	58	
	aagaaga	acgg acgacgtcgc cggtgacggt acgaccaccg cgaccgttct cgcccaggcg	60
20	ctcgtacg	gcg agggcctgcg caacgtcgcc gccggtgcca acccgatggc tctcaagcgc	120
	ggcatcg	aga aggccgtcga ggccgtctcc ggcgccctgc tggagcaggc gaaggatgtc	180
25	gagacca	nagg agcagatege ttecaeggee tecateteeg eegeegacae eeagategge	240
	gagctca	tcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
	tcccaga	cct teggtetgga getggagete acegagggta tgegettega caagggetae	360

			420
5			
	<210>	59	
	<211>	420	
	<212>	DNA	
	<213>	S. scabiei Korea isolate Kangwon-S34	
10			
	<400>	59	
	aagaaga	acgg acgacgtagc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcg	60
15	ctggtccg	gcg aaggeetgeg caaegtegee geeggtgeea accegatgge eetgaagege	120
	ggtatcg	aga aggccgtcga ggccgtctcc ggtgcgctgc tcgaccaggc caaggaggtc	180
	gagacca	aagg agcagatege etceaeggee tecateteeg eegeegacae eeagategge	240
20	gagctca	tcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag	300
			0.00
	tcgcaga	cct tcgggctcga gcttgagctc accgagggca tgcgcttcga caagggctac	360
25	atctcggo	cgt acttcgcgac cgacatggag cgcatggagg ccgtgctcga ggacccctac	420
			420

420

<211>

30

atctcggcgt acttcgccac cgacatggag cgtatggagg ccgtcctcga cgacccgtac

	<213>	S. acidiscabies Korea isolate Jeju-H20	
5	<400>	60 cgg acgacgtagc cggcgacggc acgacgaccg cgacggtcct ggcccaggcc	60
	ctggtccg	cg agggceteeg caaegtegee geeggegeea accegatgge eetcaagege	120
10	ggcatcg	aga aggeegtega ggeegtetee ggegegetee tggageagge gaaggaegte	180
10	gagacca	agg agcagatege etceaeggee tecateteeg eegeegaeae eeagategge	240
	gagctca	teg cegaggegat ggacaaggte ggeaaggaag gegteateae egtegaggag	300
15	tcccagao	cet teggtetgga getggaacte acegagggea tgegettega caagggetae	360
	atctcggc	ect acttegegae egacatggag egtatggagg egteeetgga egaceegtae	420
			420
20			
	<210>	61	
	<211>	420	
	<212>	DNA	
25	<213>	S. acidiscabies Korea isolate Kangwon-S71	
	<400>	61	
	aagaaga	ncgg acgacgtcgc cggtgacggc acgacgaccg cgacggtcct ggcccaggca	60

ctggtccgcg agggcctccg caacgtcgcc gccggcgcca acccgatggc cctgaagcgc

<212> DNA

30

	ggcatcgaga aggccgtcga ggccgtctcc ggcgccctgc tggagcaggc gaaggacgtc	180
5	gagaccaagg agcagatcgc ctccacggcc tccatctccg ccgccgacac ccagatcggc	240
	gageteateg eegaggegat ggacaaggte ggeaaggaag gegteateae ggtegaggag	300
	tcccagacct tcggtctgga gctggagctc accgagggca tgcgcttcga caagggctac	360
10	atctcggcgt acttcgcgac cgacatggag cgtatggagg cgtccctgga cgacccgtac	420
		420